

# DuPont™ Zytel® PLS90G30DR BK099

## ZYTEL® PLUS NYLON RESIN

### Product Information

Common features of Zytel® nylon resin include mechanical and physical properties such as high mechanical strength, excellent balance of stiffness and toughness, good high temperature performance, good electrical and flammability properties, good abrasion and chemical resistance. In addition, Zytel® nylon resins are available in different modified and reinforced grades to create a wide range of products with tailored properties for specific processes and end-uses. Zytel® nylon resin, including most flame retardant grades, offer the ability to be coloured.

The good melt stability of Zytel® nylon resin normally enables the recycling of properly handled production waste. If recycling is not possible, DuPont recommends, as the preferred option, incineration with energy recovery (-31kJ/g of base polymer) in appropriately equipped installations. For disposal, local regulations have to be observed.

Zytel® nylon resin typically is used in demanding applications in the automotive, furniture, domestic appliances, sporting goods and construction industry.

**Zytel® PLS90G30DR BK099 is a 30% glass fiber reinforced PA66 resin having superior resistance to hot engine coolant. It is particularly suitable for automotive Radiator End Tanks and other parts in contact with engine coolant.**

General information	Value	Unit	Test Standard
Resin Identification	PA66-GF30	-	ISO 1043
Part Marking Code	PA66-GF30	-	ISO 11469
Rheological properties	dry / cond	Unit	Test Standard
Molding shrinkage, parallel	0.2 / -	%	ISO 294-4, 2577
Molding shrinkage, normal	0.9 / -	%	ISO 294-4, 2577
Mechanical properties	dry / cond	Unit	Test Standard
Tensile Modulus	9500 / 7000	MPa	ISO 527-1/-2
Stress at break	190 / 140	MPa	ISO 527-1/-2
Strain at break	3.5 / 5.8	%	ISO 527-1/-2
Flexural Strength	280 / -	MPa	ISO 178
Charpy impact strength, 73°F	90 / 90	kJ/m <sup>2</sup>	ISO 179/1eU
Charpy notched impact strength, 73°F	11 / 13	kJ/m <sup>2</sup>	ISO 179/1eA
Thermal properties	dry / cond	Unit	Test Standard
Melting temperature, 18°F/min	263 / *	°C	ISO 11357-1/-3
Temp. of deflection under load, 260 psi	252 / *	°C	ISO 75-1/-2
Coeff. of linear therm. expansion, parallel	15 / *	E-6/K	ISO 11359-1/-2
Coeff. of linear therm. expansion, normal	100 / *	E-6/K	ISO 11359-1/-2
Flammability	dry / cond	Unit	Test Standard
Burning Behav. at 60mil nom. thickn.	HB / *	class	IEC 60695-11-10
Thickness tested	1.5 / *	mm	IEC 60695-11-10
FMVSS Class	B	-	ISO 3795 (FMVSS 302)
Burning rate, Thickness 1 mm	<100	mm/min	ISO 3795 (FMVSS 302)
Other properties	dry / cond	Unit	Test Standard
Humidity absorption, 80mil	1.9 / *	%	Sim. to ISO 62
Water absorption, 80mil	6 / *	%	Sim. to ISO 62
Density	1360 / -	kg/m <sup>3</sup>	ISO 1183
Injection	dry / cond	Unit	Test Standard
Drying Recommended	yes	-	-
Drying Temperature	≥80	°C	-
Drying Time, Dehumidified Dryer	2 - 4	h	-
Processing Moisture Content	≤0.2	%	-
Melt Temperature Optimum	290	°C	-
Min. melt temperature	280	°C	-
Max. melt temperature	300	°C	-
Max. screw tangential speed	0.2 / *	m/s	-
Mold Temperature Optimum	100	°C	-
Min. mold temperature	70	°C	-
Max. mold temperature	120	°C	-

To find out more, visit [DuPont Performance Polymers](#) or contact nearest DuPont location.

North America

Asia Pacific

Europe/Middle East/Africa

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Hold pressure range	50 - 100	MPa	-
Hold pressure time	3	s/mm	-
Ejection temperature	210	°C	-

### Characteristics

Processing	• Injection Molding		
Regional Availability	• North America	• Asia Pacific	• Near East/Africa
	• Europe	• South and Central America	• Global

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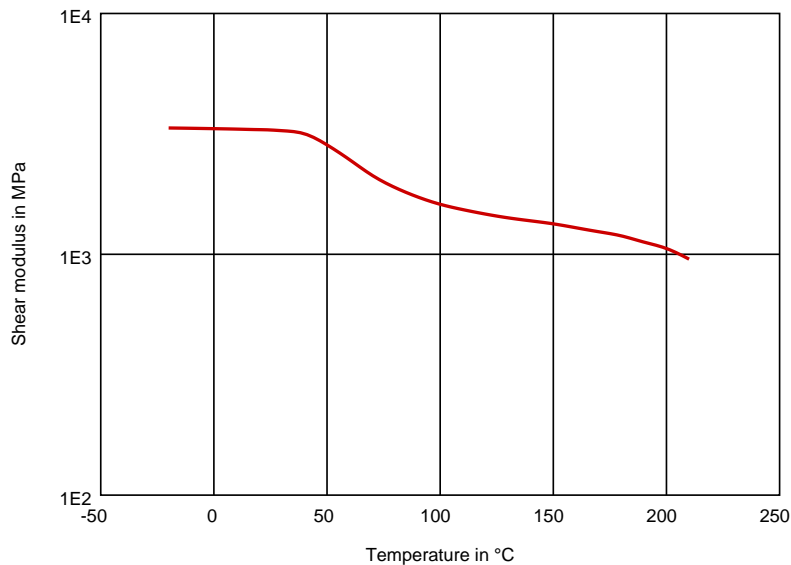


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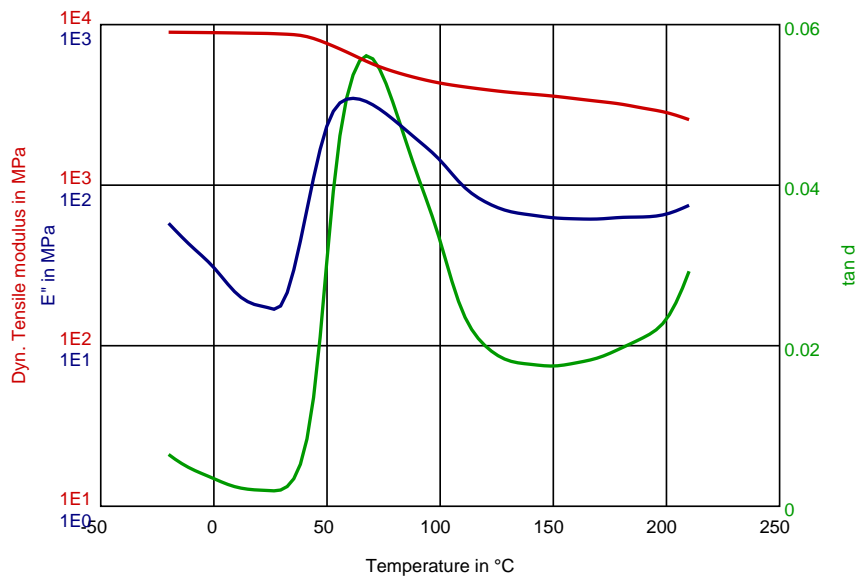
## ZYTEL® PLUS NYLON RESIN

### Diagrams

#### Dynamic Shear modulus-temperature (dry)



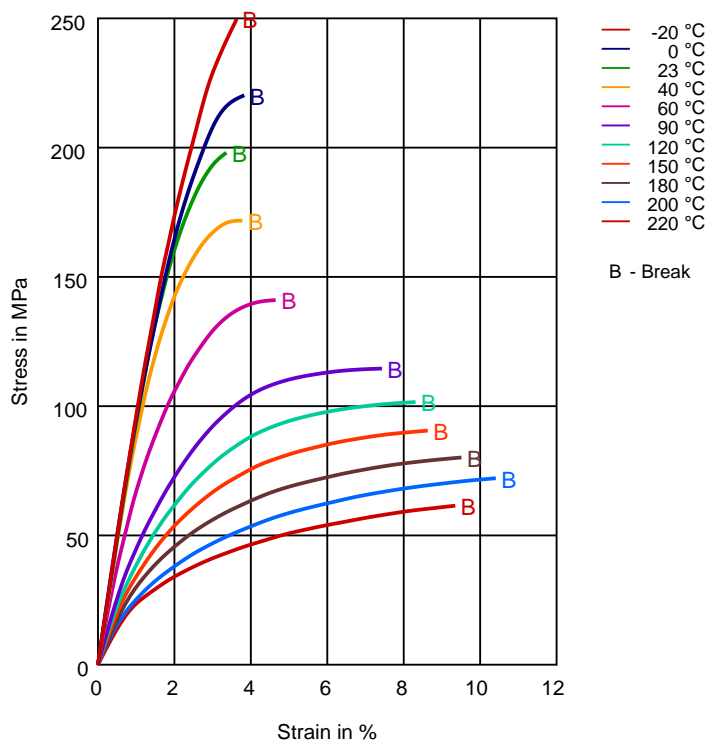
#### Dynamic Tensile modulus-temperature (dry)



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## ZYTEL® PLUS NYLON RESIN

Stress-strain (dry)



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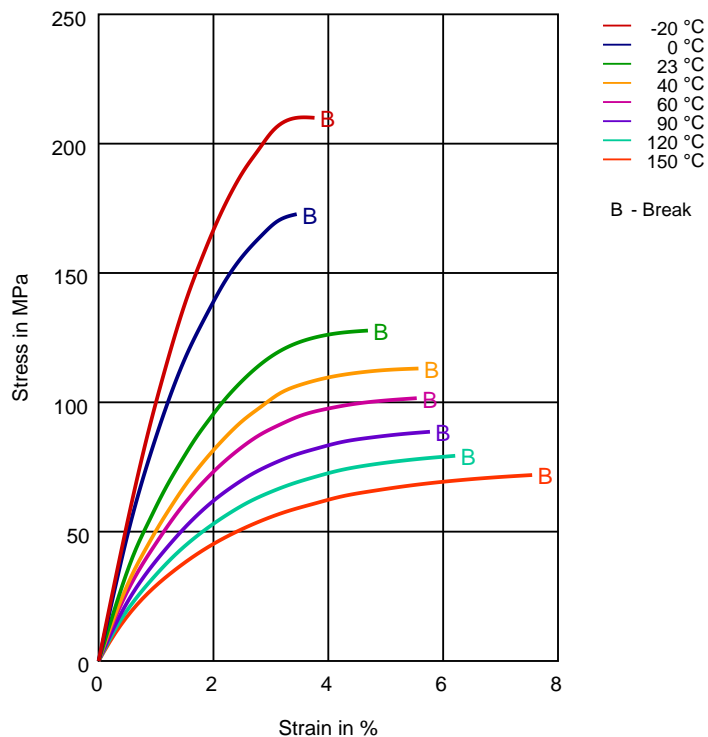
Europe/Middle East/Africa



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## ZYTEL® PLUS NYLON RESIN

Stress-strain (cond.)



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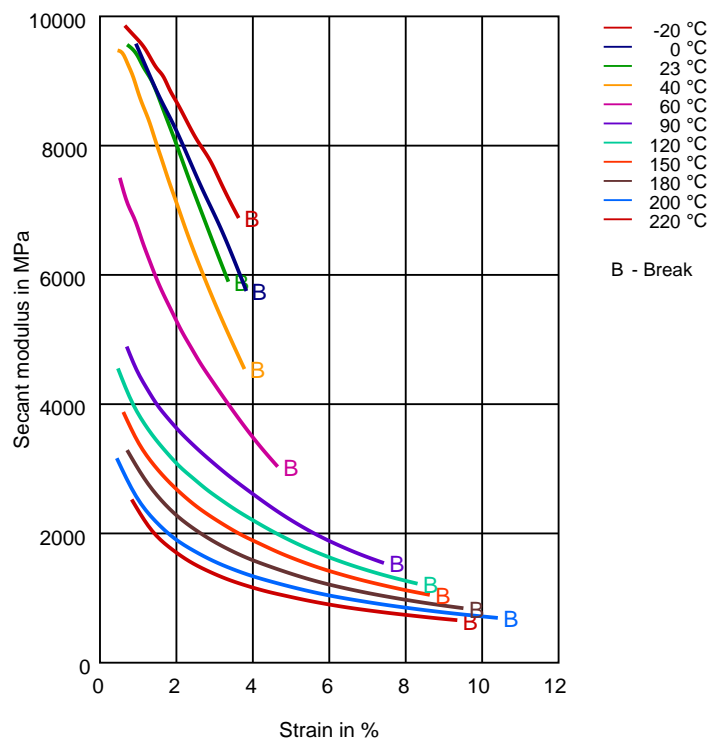
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# DuPont™ Zytel® PLS90G30DR BK099

## ZYTEL® PLUS NYLON RESIN

Secant modulus-strain (dry)



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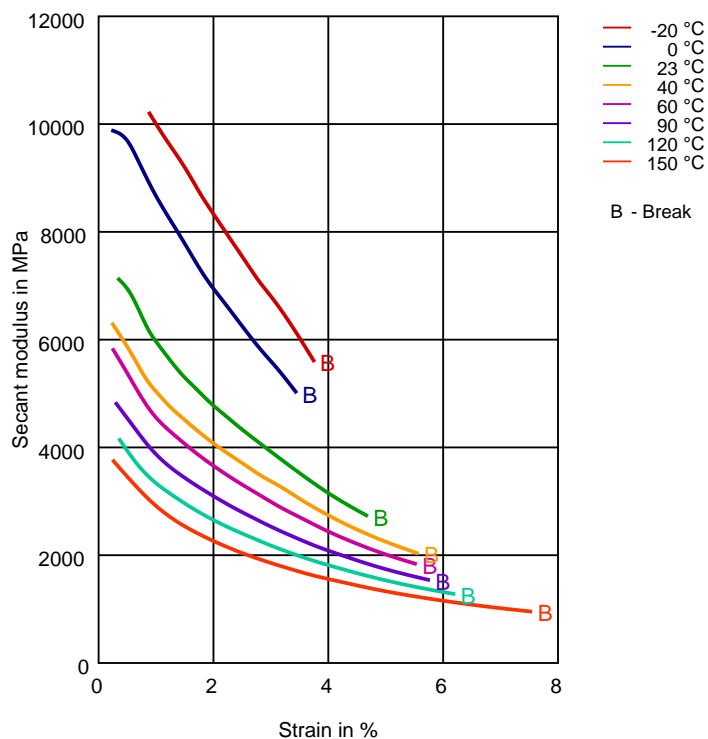
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## ZYTEL® PLUS NYLON RESIN

Secant modulus-strain (cond.)



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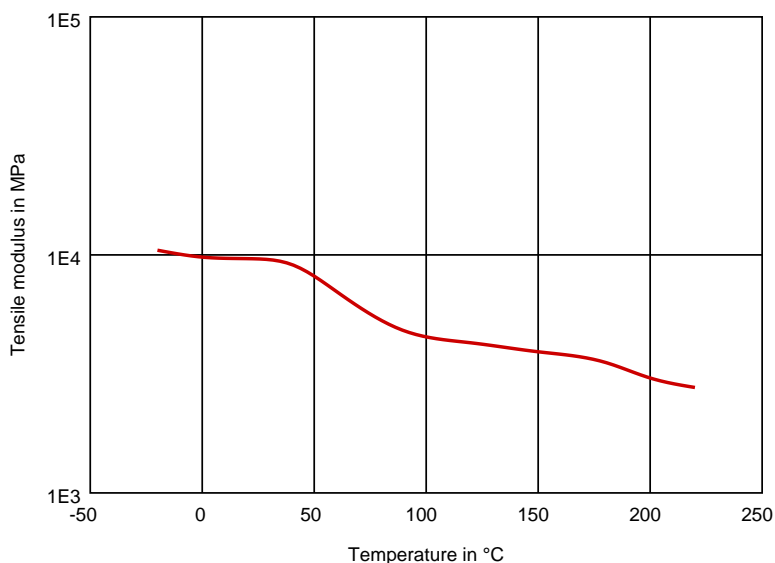
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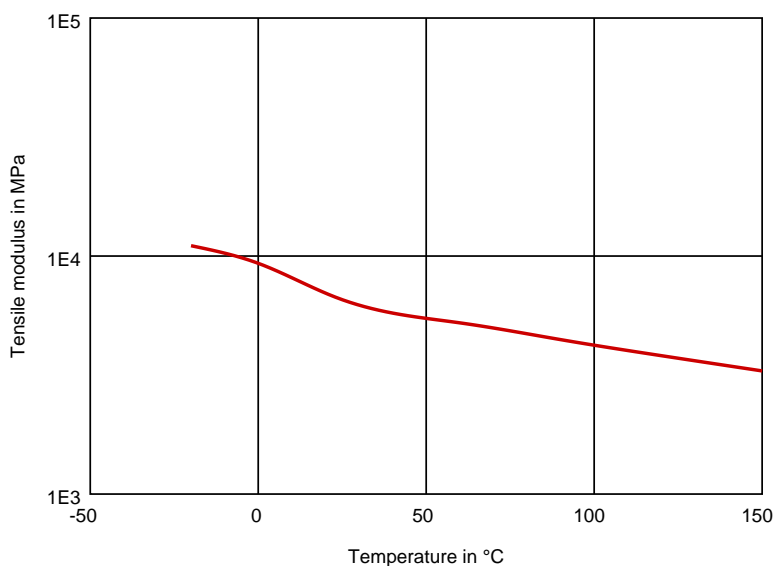
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## ZYTEL® PLUS NYLON RESIN

### Tensile modulus-temperature (dry)



### Tensile modulus-temperature (cond.)





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### Chemical Media Resistance

#### Other

✓ Coolant Glysantin G48, 1:1 in water (125°C)

#### Symbols used:

✓ possibly resistant

Defined as: Supplier has sufficient indication that contact with chemical can be potentially accepted under the intended use conditions and expected service life. Criteria for assessment have to be indicated (e.g. surface aspect, volume change, property change).

✗ not recommended - see explanation

Defined as: Not recommended for general use. However, short-term exposure under certain restricted conditions could be acceptable (e.g. fast cleaning with thorough rinsing, spills, wiping, vapor exposure).

Contact DuPont for Material Safety Data Sheet, general guides and/or additional information about ventilation, handling, purging, drying, etc. ISO Mechanical properties measured at 160 mil (Hytrel® measured at 80 mil), IEC Electrical properties measured at 80 mil, all ASTM properties measured at 120 mil, and test temperatures are 73°F unless otherwise stated.

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